Provincial Emergency Program

1990 REPORT ON GOVERNMENT EARTHQUAKE PREPAREDNESS INITIATIVES

COVERING THE PERIOD JULY 1989 TO JUNE 1990

Ministry of
Solicitor General

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Foreword

On October 17, 1989 a Richter magnitude 7.1 earthquake struck Northern California, particularly the areas of Santa Cruz, San Francisco and Oakland. This *Loma Prieta* earthquake was the latest in a series of world seismic events which have prompted a serious examination of the earthquake threat to British Columbia and the state of preparedness for the next earthquake to happen here.

Geoscientists are definite in their forecast of a Loma Prieta-sized earthquake near or in Southwestern British Columbia soon. This event is a recurring one, on a 35-40 year cycle. Although scientific evidence is as yet incomplete, there is also a belief that a much larger *subduction* earthquake is possible in the next 150 years, with an intensity as large as any earthquake ever recorded. Such an event would have catastrophic implications for any communities within hundreds kilometres of its epicentre and could cause major earthquake or tsunami damage along the entire Pacific coast from Mexico to Alaska.

In the year covered by this report, and particularly since Loma Prieta, a considerable amount of activity has been evident in British Columbia ministries and crown corporations. The report will highlight some of the initiatives which have taken place with a view to encouraging additional action without any further delay.

The information herein was derived from ministry and corporation correspondence resulting from a simple request to provide an update to the Provincial Emergency Program. It did not ask for information in any of the definitive areas discussed by this report, and so some ministries' specific and commendable preparedness actions may not have been reported or even staffed to the person responsible. Regrettably also, some ministries and corporations did not reply. It is hoped that next year's report will be more complete and continue to reflect significant gains.

Part 1

Collective Initiatives

INTER-AGENCY EMERGENCY PREPAREDNESS COMMITTEE (IEPC)

The IEPC, co-chaired by Director, Provincial Emergency Program and another agency's representative (currently Manager , Suggestion Awards and Administrative Services, Ministry of Finance and Corporate Relations) has as its objective the collective management of emergency preparedness matters. It was formed by those ministries and crown corporations who wished to participate, originally and specifically to formulate an earthquake response plan for British Columbia. An early initiative of the IEPC was to form the Seismic Safety Sub-Committee (SSSC), which includes other levels of government and the non-government sector.

BRITISH COLUMBIA EARTHQUAKE RESPONSE PLAN (INTERIM)

During the reporting period, the IEPC requested the SSSC to draft the *British Columbia Earthquake Response Plan (Interim)* as a concept-based "action plan" which would serve as a model for additional detailed planning under the co-ordination of provincial ministries. These ministries would be acting as the "lead" for 17 designated emergency response functions, many of which do not closely parallel the non-emergency ministry functions and which will require considerable planning effort to utilize resources of supporting agencies. The Ministry of Solicitor General has the overall "lead" and is the sponsor of the plan. (See Table I)

The draft plan was produced by the end of 1989, and has been subsequently staffed with federal and other supporting agencies. The concepts in the plan were validated in an exercise scenario at the 1990 British Columbia Crisis Management Seminar held in April. At the conclusion of the report period, the plan's emergency response function concepts were being expanded by the lead ministries involved and their supporting agencies.

This "first ever" major provincial disaster plan will take several years to develop in full detail. Some significant resource acquisitions may be necessary, and co-operation of federal, municipal and private sector organizations is required. The management aspects of the plan are applicable to major provincial government response to any type of disaster.

BUILDING SEISMIC SAFETY STANDARDS

The IEPC also requested the SSSC to assess the current state of building seismic safety policies and standards in British Columbia, and to make recommendations if necessary. Briefly, the SSSC determined that any building seismic safety standards are in building codes. The current (1985) codes were in the process of review at the national level and the 1990 edition would have more stringent requirements.

Building codes, however, do not incorporate provisions for enforcement of standards or application of them to older structures built to lesser standards. Recommendations to enforce seismic safety standards and to develop a provincial seismic upgrading/retrofitting policy were submitted to the IEPC, accepted, and forwarded to the Ministry of Municipal Affairs, Recreation and Culture (Building Standards Branch).

BRITISH COLUMBIA EARTHQUAKE RESPONSE PLAN (INTERIM)

Overall Lead Ministry- Solicitor General

Emergency Response Function (ERF)	Lead Ministry for Function
Medical	Health
Emergency Social Services	Social Services and Housing
Law and Order	Solicitor General
Urban Search and Heavy Rescue	(under consideration)
Communications	Solicitor General
Damage Assessment	Solicitor General
Firefighting/Rescue	Municipal Affairs
Transportation	Transportation and Highways
Engineering and Construction	(under consideration)
Human Resources	(under consideration)
Resource Support	Government Management Services
Coroner/Mortuary	Solicitor General
Hazardous Materials	Environment
Public Information	Provincial Secretary
Food and Agriculture	Agriculture and Fisheries
Finance and Claims	Finance
Utilities	No lead ministry; ERF plan developed jointly by BC Gas, BC Hydro and BC Telephone

Table I- Ministries with major involvement in earthquake response planning.

Part 2

Ministry Initiatives

In this part of the report, those ministries which have reported significant progress, major events, or new initiatives are identified. In some instances, to avoid repetition, additional ministries will be grouped together where their activities seem to be similar.

MINISTRY OF FINANCE AND CORPORATE RELATIONS

A great deal of initiative has been shown within this ministry in that a comprehensive employee earthquake training and safety policy was developed and implemented during the year. It was passed to other ministries for consideration (at the deputy minister level), resulting in a quantum leap in the earthquake awareness of government employees. Shortly thereafter, a decision was taken to develop the ministry policy (with some modifications) as a government-wide Health and Safety Directive. A draft of that directive has been circulated, and the official document is scheduled for October 1990 issue by Government Personnel Services Division.

While many ministries are planning similar programs, the following ministries report having *begun* an employee earthquake awareness and safety program, either independently or as a result of the Ministry of Finance efforts:

Office of the Premier

Energy, Mines and Petroleum Resources

Forests (over 90% of staff attended!)

Health

Native Affairs

Solicitor General

MINISTRY OF GOVERNMENT MANAGEMENT SERVICES

With the Ministry of Finance, initiated consideration of overall ministry preparedness planning for the continuation of essential government services following an earthquake. This initiative was then referred to the Inter-agency Emergency Preparedness Committee, which has taken on the drafting of recommendations to government.

MINISTRY OF ADVANCED EDUCATION, TRAINING AND TECHNOLOGY

Though not identified as either a lead or supporting ministry in the earthquake response planning done to date, this ministry has seen fit to support the intent of the plan through the training of additional Industrial First Aid qualified staff, and updating of front-line first aid equipment. Having consulted with the Ministry of Finance concerning the above two programs, they have also procured a number of VHF hand-held radios suitable for use anywhere in an emergency response organization or for internal ministry communication in the absence of telephone service.

MINISTRY OF SOLICITOR GENERAL

As the proponent for public earthquake preparedness activities and disaster response management by the government (when required), the Provincial Emergency Program of the Ministry of Solicitor General is involved, either initially or eventually, in virtually all programs and projects related to earthquakes. During the period of this report, the following significant activities took place:

- An Earthquake/Tsunami Plans Officer was hired under a Joint Emergency Preparedness Program 5-year contract.
- The draft *British Columbia Earthquake Response Plan (Interim)* was published.
- The Hon. Russ Fraser, Solicitor General toured the province and conducted public presentations on emergency preparedness and earthquake awareness shortly after the *Loma Prieta* earthquake.
- The Provincial Emergency Program and the Provincial Emergency Program Academy conducted the 1990 British Columbia Crisis Management Seminar at the Justice Institute in Vancouver. Over 100 participants from all levels of government "played" earthquake response in a variety of scenarios to test the draft Earthquake Plan's concepts.
- A new series of Provincial Emergency Program brochures on earthquake preparedness was begun (*Pocket Earthquake Survival Guide, Checklist of Emergency Supplies*, HELP/OK Sign, etc).
- A standard *Earthquake Briefing* was prepared for presentation to public groups by Program staff.

MINISTRY OF EDUCATION

The Ministry of Education printed the document *British Columbia School Earthquake Safety Guidebook* and distributed it to all schools and school boards in the province. In addition, seismic safety screening of school buildings in the greater Vancouver School District was completed, providing the ministry with a professional assessment of risk upon which to base school replacement and retrofitting capital projects. A similar review for the Greater Victoria School District was under way as well.

$2 million was allocated for these reviews plus the detailed engineering studies required to undertake improvement of the highest risk buildings. An additional $1.2 million was allocated to carry out the actual seismic safety upgrading of four pilot-project schools.

Part 3

Crown Corporation Initiatives

Several provincial crown corporations have been in the forefront of earthquake safety and have programs and projects which have been in effect for several years. In this part of the report those corporations' contribution to preparedness are highlighted.

BRITISH COLUMBIA BUILDINGS CORPORATION

As the "landlord" or "leaseholder" for much of the inventory of government-occupied buildings, BCBC has accepted the responsibility to advise tenants how to be better prepared in an earthquake emergency by having published a model emergency plan (applicable to any emergency situation requiring safe and orderly evacuation).

BCBC will also assess the preparedness of a facility to withstand an earthquake and recommend action to protect the building and its occupants. This service, as well as the model plan described in the previous paragraph, may be requested from BCBC's Programming and Planning Department.

BRITISH COLUMBIA FERRY CORPORATION

BC Ferries has contracted a professional engineering study to determine the effect of earthquakes on its terminals and vessels; and is developing education and awareness programs for its staff to enhance corporation self-sufficiency during earthquake response in order to lessen demands upon other agencies. In addition to its involvement as a supporting agency to the **Transportation** emergency response function in the *British Columbia Earthquake Response Plan (Interim)*, BC Ferries is also implementing a corporate emergency response plan.

BRITISH COLUMBIA PAVILION CORPORATION

BC Pavilion Corporation has formulated its corporate emergency response plan, including ongoing mitigation of risks, and business recovery after an earthquake. All staff have been provided with an emergency preparedness brochure covering survival both at work and at home. Training is being conducted in CPR, first aid and basic fire fighting. Emergency Response Teams are being formed of qualified staff members in each facility.

The corporation has also assessed the survivability of each facility, and has developed the capability to establish and operate emergency operations centres in each facility and centrally in the corporation's administrative offices.

BC Pavilion Corporation has initiated discussions with the City of Vancouver for mutual aid, including use of facilities by the city during a disaster. The corporation also participates in a joint advisory committee initiated by the Insurance Bureau of Canada to enhance disaster preparedness amongst members of the general public.

BRITISH COLUMBIA LOTTERY CORPORATION

BC Lottery Corporation has completed and tested its disaster recovery plan, which provides for business continuation in the event of an earthquake (of any magnitude) at the head office site in Kamloops. The plan incorporates a back-up data centre and other redundant systems which would permit resumption of critical business functions within 2 to 30 days.

INSURANCE CORPORATION OF BRITISH COLUMBIA

ICBC has formulated and distributed a corporate business resumption plan should its headquarters be destroyed by an earthquake or other disaster.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

BC Hydro has major assets, notably its dams and electrical transmission facilities, which could be vulnerable to earthquake effects and result in grave danger to people and property. As a result of this self-assessed situation, BC Hydro has (since the 1970s) been upgrading the seismic safety of these facilities. $96 million has been expended to strengthen those dams found to be at greatest risk.

BC Hydro has emergency response plans for each dam site, tested annually. One major river system is subjected to full-scale emergency test each year, involving all staff and supporting response agencies, local governments, and the governments of Alberta and Washington.

$8.8 million has been allocated to strengthen other electrical power facilities vulnerable to earthquake damage. Seismic design criteria are being incorporated in future additions.

BC Hydro is a major contributor to provincial earthquake response planning, in view of the importance of rapid and systematic electrical power restoration to the areas affected by an earthquake (Utilities emergency response function).

BRITISH COLUMBIA SYSTEMS CORPORATION

BC Systems has also been in the forefront of corporate preparedness activity, having contracted an earthquake survivability analysis of its primary site, which was used to develop a broad-based mitigation program emphasizing personnel safety and operational considerations. Non-structural seismic hazards are now being corrected, and emergency lighting is being installed.

Twenty staff volunteers have been selected and trained to perform light rescue procedures, and another 20 have been trained in emergency first aid. The necessary first aid and rescue support equipment has been acquired.

Computer and telecommunications recovery studies are being done.

BRITISH COLUMBIA TRANSIT

BC Transit is developing its corporate earthquake response plan. The corporation is also a participant in provincial earthquake response planning as a supporting agency of the **Transportation** emergency response function of the *British Columbia Earthquake Response Plan (Interim).*